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ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/6 4/2
19304B MLRS, 19305A MLRS, MISSILE NUMBERS BN-031, BN-019, BN-01--ETC(U)
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DR 1226
Mar. 82

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AD A113885

METEOROLOGICAL DATA REPORT
19304B MLRS, 19305A MLRS
Missile Numbers BN-031, BN-019,
BN-018, BN-017, BN-016, BN-027
Round Numbers V-230/MD-84, V-231/MD-85,
V-235/MD-89, V-232/MD-86, V-233/MD-87, V-234/MD-88
13 March 1982

by

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Program Support Coordinator
Phone Number (505) 679-9568
AVN Number 349-9568

ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

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UNITED STATES ARMY ELECTRONICS COMMAND

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19304B MLRS, 19305A MLRS, Missile No. BN-031, BN-019, BN-018, BN-017, BN-016, BN-027, Round Nos. V-230/ MD-84, V-231/MD-85, V-235/MD-89, V-232/MD-86, V-233/MD-87, V-234/MD-88 presented in tabular form.		

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INTRODUCTION

19304B/19305A MLRS, Missile Numbers BN-031, BN-019, BN-018, BN-017, BN-16, and BN-027, Round Numbers V-230/MD-84, thru V-235/MD-89, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1132:26, 1132:30 1132:35, 1138:10, 1138:30, and 1138:34 MST, 13 March 1982. The scheduled launch times were 1130, 1130:04.5, 1130:09, 1131:00, 1131:04.5 and 1131:09 MST.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from pilot-balloon observations at:

SITE AND ALTITUDE

LC-33 2 Km
NICK 1550 Meters

(2) Air structure data (rawinsonde) were collected at the following Met Sites:

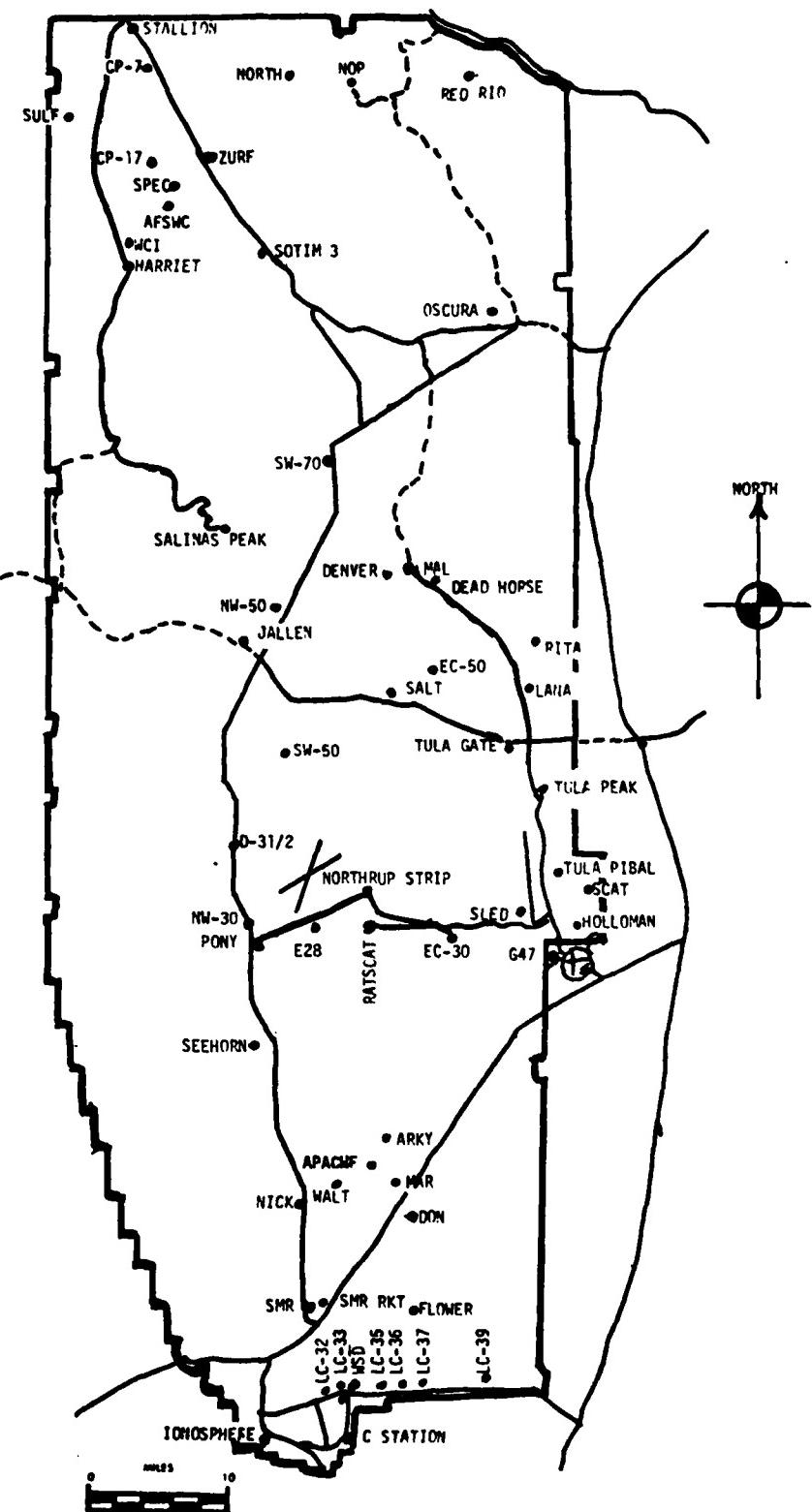
SITE AND TIME

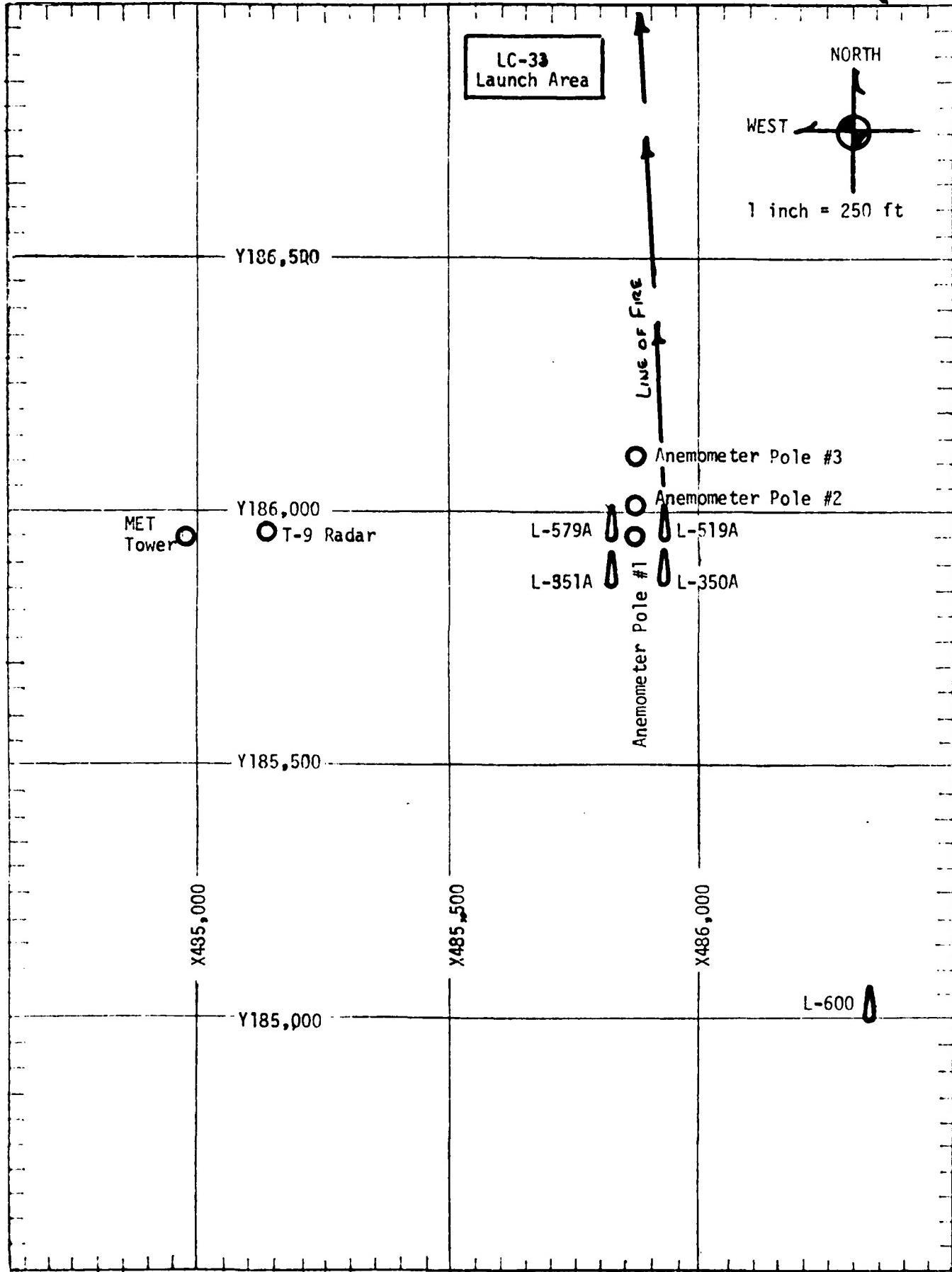
WSD	0830 MST
LC-37	0930 MST
WSD	1030 MST
WSD	1130 MST

Accession For	
NTIS	GRA&I
DTIC TAB	<input checked="" type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By _____	
Distribution/ _____	
Availability Codes	
Dist	Avail and/or Special
A	



WSMR METEOROLOGICAL SITES





PROJECT SURFACE OBSERVATION

TABLE 1

DATE	DAY	MAR	YEAR						
TIME	PRESSURE mb	TEMPERATURE °C	DEW POINT °C	RELATIVE HUMIDITY %	DENSITY gm/m³	WIND DIRECTION deg Tn	SPEED kts	CHARACTER kts	VISIBIL- ITY
1132	873.2	20.5	3.8	33	1031	170	14		40
1136	873.2	20.5	3.8	33	1031	195	09		40

OBSTRUCTIONS TO VISIBILITY	CLOUDS			REMARKS		
	1st LAYER AMT TYPE HGT	2nd LAYER AMT TYPE HGT	3rd LAYER AMT TYPE HGT			
1	CU 6500 8	AS 10,000 1	C1 28,000	VIRGA WNW		
1	CU 6500 8	AS 10,000 1	C1 25,000	VIRGA WNW		

PSYCHROMETRIC COMPUTATION

TIME:	1132	1136
DRY BULB TEMP.	20.5	20.5
WET BULB TEMP.	11.2	11.2
WET BULB DEPR.	9.3	9.3
DEW POINT	3.8	3.8
RELATIVE HUMID.	33	33

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1 X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL			POLE #2 X485,874.93 Y186,012.00 H4033.57 53.0 ft. AGL			POLE #3 X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	123	09	T-30	156	10	T -30	153	11
T-20	124	11	T-20	150	10	T -20	153	17
T-10	122	11	T-10	145	10	T -10	149	15
T0.0	123	16	T0.0	151	14	T 0.0	158	19
T+10	130	13	T+10	155	11	T +10	159	17

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	155	10	T -30	154	15
T-20	139	12	T -20	156	11
T-10	144	13	T -10	179	12
T0.0	168	11	T 0.0	174	12
T+10	131	10	T +10	170	16

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	135	16	T -30	144	13
T-20	157	10	T -20	148	11
T-10	175	10	T -10	151	12
T0.0	164	13	T 0.0	152	15
T+10	166	16	T +10	149	17

TABLE 4 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

]

POLE #1			POLE #2			POLE #3		
X485,874.29			X485,874.93			X485,877.29		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	173	07	T-30	193	06	T-30	206	13
T-20	176	08	T-20	192	08	T-20	200	13
T-10	169	08	T-10	185	07	T-10	195	12
T0.0	168	10	T0.0	196	08	T0.0	195	12
T+10	163	11	T+10	180	09	T+10	200	14

TABLE 5 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	204	07	T-30	185	10
T-20	165	10	T-20	180	14
T-10	177	10	T-10	191	09
T0.0	194	07	T0.0	196	10
T+10	151	10	T+10	185	10

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	180	12	T-30	175	15
T-20	180	12	T-20	174	14
T-10	181	11	T-10	168	16
T0.0	171	13	T0.0	168	17
T+10	177	10	T+10	156	12

TABLE 6

THE PILOT-BALLOON TRAIL DATA
DATE 13 MARCH 1982

SITE: LC 33
 TIME: 1132 MST
 WSTM COORDINATES:
 X= 486,872.00
 Y= 184,146.75
 H= 3,981.15

SITE: NICK
 TIME: 1132 MST
 JSTM COORDINATES:
 X= 470,734.56
 Y= 255,775.64
 H= 4,126.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	170	11
150	MISG	MISG
210	MISG	MISG
270	156	21
330	161	21
390	150	25
450	160	27
510	165	22
570	174	22
630	177	23
690	188	23
750	185	23
810	195	27
870	195	29
930	189	31

Data obtained from Nike-Herc
 Tracked pilot-balloon
 observation.

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	164	04
150	145	14
210	143	16
270	141	16
330	140	16
390	140	17
450	143	17
510	145	20
570	157	19
630	174	19
690	175	22
750	176	27
810	178	26
870		
930		
2000		

Data obtained from single
 theodolite tracked pilot-balloon
 observation.

TABLE 7

AIMING AND T-TIME COMPUTER MET MESSAGES
13 MARCH 1982

WSD 0830 MST		LC-37 0930 MST
METCM1324064		METCM1325064
131550122874		131650124874
00142006 28790874		00000000 29050874
01075005 28780864		01312005 28900864
02224011 28740839		02245010 28640838
03253024 28470800		03251030 28400799
04257036 28110753		04263041 28060752
05281038 27840708		05291045 27750708
06292038 27470666		06309044 27460665
07309038 27150626		07314042 27030625
08333042 26680587		08325051 26640587
09336053 26260551		09345047 26240550
10359056 25910515		10363052 25800515
11365065 25570483		11356063 25460482
12376073 25010436		MISSING
WSD 1030 MST		WSD 1130 MST
METCM1324064		METCM1324064
131750122875		131850122873
00338018 29410875		00444020 29480873
01247026 29220864		01321027 29340863
02262028 28850839		02315027 29100838
03257027 28500800		03302025 28830799
04268025 28050753		04311028 28360753
05282036 27620709		05332023 27820709
06305039 27250666		06339030 27290666
07347044 26930625		07348038 26870626
08348043 26460587		08350040 26460587
09344043 26070550		09365043 26100550
10344044 25780515		10361041 25830515
11346051 25410482		11378042 25390482
12357065 24890435		12394049 24860435

STATION ALTITUDE 3989.0 FT SL
13 MAR. 1943 0830 HRS MST
ASCENSION NO. 94

TELEMETRIC DATA
01200 JULY 94
WHITE SMITHS
TABLE 8

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES C	REL. HUM. PERCENT
874.3	3989.0	13.6	55.0
864.4	4304.2	13.7	41.0
850.0	4769.3	14.1	40.0
817.4	5349.3	12.2	40.0
762.0	7765.5	7.6	-2.4
700.0	10649.5	4.0	-2.6
646.8	12144.2	-1.0	0.0
624.2	12365.9	-3.0	-7.3
612.6	13561.2	-4.0	-9.6
554.8	16101.6	-10.8	-11.0
500.0	16706.6	-16.1	-10.5
439.2	21935.6	-22.6	-23.7
430.8	22345.1	-20.9	-32.7
400.0	24111.8	-27.2	-39.4

WORLD COORDINATES:
32.40045 LAT N
106.37035 LON W

STATION NUMBER 3489.00 FEET
13 MILE 02 WHITE HILLS, WIS.
ASCENSIO. 1.0.

94

UPPLA AIR DATA
0720020044
WHITE HILLS
ASCENSIO. 1.0.
TABLE 9

STATION COORDINATES
32.40043 LAT DEG
106.37055 LONG DEG

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CELSIUS	REL.HUM. PERCENT	DEW POINT DEGREE CELSIUS	SLP INCHES	DEW POINT DEGREES CELSIUS	SLP INCHES	SLP INCHES	SLP INCHES	SLP INCHES
3984.3	474.5	13.6	4.2	53.0	105.4	66.4	60.0	60.0	60.0	60.0
4000.0	474.0	13.6	9.1	52.6	105.0	66.9	60.9	60.9	60.9	60.9
4500.0	850.3	13.9	.7	40.6	103.0	66.9	113.1	113.1	113.1	113.1
5000.0	842.9	13.7	.4	40.0	102.0	66.7	116.6	116.6	116.6	116.6
5100.0	842.7	12.8	-4.4	40.0	100.7	65.9	116.0	116.0	116.0	116.0
5200.0	812.9	11.9	-1.1	40.7	92.1	65.5	114.0	114.0	114.0	114.0
5300.0	790.2	10.6	-1.4	43.1	97.2	65.1	112.0	112.0	112.0	112.0
5400.0	783.7	9.4	-1.8	45.4	96.5	65.1	112.9	112.9	112.9	112.9
5500.0	750.4	8.2	-2.2	47.8	95.0	65.3	113.9	113.9	113.9	113.9
5600.0	752.4	7.2	-2.4	50.3	93.0	65.2	115.3	115.3	115.3	115.3
5700.0	741.5	6.4	-2.4	53.2	92.1	65.2	117.6	117.6	117.6	117.6
5800.0	727.0	5.7	-2.4	56.0	90.7	65.0	119.1	119.1	119.1	119.1
5900.0	714.4	4.9	-2.5	58.9	89.2	65.0	119.6	119.6	119.6	119.6
6000.0	701.3	4.1	-2.6	61.7	87.3	64.5	120.8	120.8	120.8	120.8
6100.0	680.2	2.9	-3.4	62.9	86.0	64.1	125.7	125.7	125.7	125.7
6200.0	675.3	1.7	-4.4	63.8	82.1	65.2	127.6	127.6	127.6	127.6
6300.0	666.7	.5	-5.3	64.8	90.7	67.0	129.1	129.1	129.1	129.1
6400.0	656.3	-.7	-6.3	65.7	89.2	67.5	129.6	129.6	129.6	129.6
6500.0	630.1	-2.0	-6.9	69.0	81.6	68.2	130.8	130.8	130.8	130.8
6600.0	620.9	-3.2	-7.7	70.6	80.0	69.1	135.7	135.7	135.7	135.7
6700.0	614.9	-3.9	-9.4	65.6	79.3	69.6	139.4	139.4	139.4	139.4
6800.0	602.2	-5.2	-9.8	70.0	84.1	69.6	140.4	140.4	140.4	140.4
6900.0	590.6	-6.5	-10.1	75.7	82.9	69.8	142.0	142.0	142.0	142.0
7000.0	579.2	-7.9	-10.5	81.4	75.9	71.1	147.1	147.1	147.1	147.1
7100.0	566.0	-9.2	-10.9	87.1	80.0	74.0	152.6	152.6	152.6	152.6
7200.0	557.0	-10.5	-11.5	92.8	73.7	75.5	157.9	157.9	157.9	157.9
7300.0	546.0	-11.6	-12.5	94.5	72.0	74.9	161.3	161.3	161.3	161.3
7400.0	535.3	-12.6	-13.3	95.0	77.0	73.7	164.1	164.1	164.1	164.1
7500.0	524.7	-13.6	-14.2	95.6	70.5	75.3	169.4	169.4	169.4	169.4
7600.0	514.3	-14.7	-15.1	96.2	82.2	76.4	174.4	174.4	174.4	174.4
7700.0	504.1	-15.7	-16.1	96.8	69.1	76.5	179.5	179.5	179.5	179.5
7800.0	493.5	-16.7	-17.1	96.5	72.0	77.0	184.0	184.0	184.0	184.0
7900.0	484.1	-17.7	-18.2	95.5	71.4	78.3	187.0	187.0	187.0	187.0
8000.0	474.5	-18.7	-19.3	94.6	70.5	78.0	193.9	193.9	193.9	193.9
8100.0	464.7	-19.7	-20.5	93.7	63.0	82.0	202.0	202.0	202.0	202.0
8200.0	453.5	-20.7	-21.9	92.7	67.7	82.5	203.7	203.7	203.7	203.7
8300.0	446.1	-21.7	-22.7	91.8	67.0	84.4	214.6	214.6	214.6	214.6
8400.0	437.0	-23.0	-23.9	90.6	65.9	82.0	217.3	217.3	217.3	217.3
8500.0	428.0	-23.2	-25.2	89.4	60.6	82.1	221.6	221.6	221.6	221.6
8600.0	419.1	-23.8	-25.8	87.0	60.9	82.7	224.9	224.9	224.9	224.9
8700.0	410.1	-24.1	-26.0	85.7	62.0	83.0	228.5	228.5	228.5	228.5
8800.0	401.7	-24.7	-27.7	83.6	61.0	83.7	231.3	231.3	231.3	231.3
8900.0	393.3	-25.0	-29.0	81.4	60.0	84.4	234.0	234.0	234.0	234.0
9000.0	385.0	-25.3	-30.7	79.2	59.0	85.0	236.8	236.8	236.8	236.8
9100.0	376.7	-25.6	-31.4	77.0	58.0	85.7	239.5	239.5	239.5	239.5
9200.0	368.0	-26.0	-32.1	74.8	57.0	86.4	242.2	242.2	242.2	242.2
9300.0	359.3	-26.3	-32.8	72.6	56.0	87.1	244.9	244.9	244.9	244.9
9400.0	350.6	-26.7	-33.5	70.4	55.0	87.8	247.6	247.6	247.6	247.6
9500.0	341.9	-27.0	-34.2	68.2	54.0	88.5	250.3	250.3	250.3	250.3
9600.0	333.2	-27.4	-34.9	66.0	53.0	89.2	253.0	253.0	253.0	253.0
9700.0	324.5	-27.7	-35.6	63.8	52.0	89.9	255.7	255.7	255.7	255.7
9800.0	315.8	-28.0	-36.3	61.6	51.0	90.6	258.4	258.4	258.4	258.4
9900.0	307.1	-28.3	-37.0	59.4	50.0	91.3	261.1	261.1	261.1	261.1
10000.0	298.4	-28.6	-37.7	57.2	49.0	92.0	263.8	263.8	263.8	263.8

STATION ALTITUDE 3989.00 FT. T.SL
13 MAR. 1962
ASCLN'SIO, 1.0.

WEATHER DATA
0720020044
RHIT, 54%
106.37033 LON LEE

DEOLIST COMMUTAITS
32.40043 LAT LEE
106.37033 LON LEE

TABLE 9 CONT'D

DEUTERIUM	PRESSURE	TEMPERATURE	LL.DIA.	DENSITY	SL.PT.	IND. DIA.					
ALITUDE	AIR	DEWPONT	PERCENT	GM/CUBIC	SOUND	DIRECTION	SPEED	KNOTS	KNOTS	KNOTS	KNOTS
PSL. FEET	MILLIARS	DEGREES CELSIUS	GRADE	METER	KNOIS	LGHLSCIN	LGHLSCIN	LGHLSCIN	LGHLSCIN	LGHLSCIN	LGHLSCIN
23500.0	410.4	-26.4	-36.9	36.2	579.3	0120					
24000.0	401.9	-27.1	-38.9	31.1	568.8	0110					

STATION ALTITUDE 3489.00 FEET
13 MAR. 12 0830 HRS. MDT
ASCENSION 10.

MANITOBA LEVELS
0720020044
WHITE SHAW
TABLE 10

STATION COORDINATES
32.4043 LAT DEG
106.0773 LONG DEG

PRESSURE (EQUIOTENTIAL MILLIBARS	FEET	DEGREES CENTIGRADE	TEMPERATURE AIR DEGREES		WIND DIRECTION DEGREES FROM NORTH	WIND VELOCITY KNOTS
			PERCENT	PERCENT		
850.0	4766.	14.1	7	40.	124.9	10.1
600.0	6135.	10.4	-1.3	43.	141.9	3.2
750.0	6108.	6.9	-2.4	54.	146.3	35.9
700.0	10040.	4.0	-2.6	62.	161.1	37.3
650.0	12002.	7.7	-6.3	60.	165.8	36.7
600.0	14083.	-5.4	-9.8	71.	181.6	44.4
550.0	16300.	-11.2	-12.0	94.	193.6	49.6
500.0	18681.	-16.1	-16.5	97.	204.2	00.0
450.0	21260.	-21.3	-22.2	92.		
400.0	24072.	-27.2	-39.4	30.		

STATION ALTITUDE 4051.7 FEET MSL
13 APR. 62 0935 HRS. MSL
ASCENSIO. 10. 14

SIGNIFICANT LEVEL DATA
07201500Z
LC-37
TABLE 11

STATION COORDINATES
32°40'17"S LAT.
106°51'23"E LONG.

PRESSURE (GFMFTIC MILLIBARS MSL)	ALTITUDE FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
873.9	4051.4	16.4	93.0
850.0	4021.4	12.9	92.0
813.6	6025.2	11.1	43.0
767.0	7631.2	7.1	36.0
738.4	8656.8	6.0	38.0
700.0	10687.3	2.8	71.0
675.2	11045.6	1.5	64.0
632.2	12775.2	-2.9	71.0
615.2	13483.0	-4.9	63.0
597.6	14223.4	-6.2	64.0
531.6	17203.2	-13.5	80.0
515.4	17974.1	-16.1	96.0
500.0	18724.3	-17.3	97.0
438.6	21919.4	-23.2	96.0
424.0	22726.3	-27.4	94.0

STATION ALTITUDE 4551.37 FEET .5L
13 MAR. 32 0935 hrs MST
ASCENSION NO. 14

UPPER AIR DATA
0720180014
LC-37

TABLE 12

GEODETIC ALTITUDE MSL FEET	DEGREES MINUTES SECONDS	TEMPERATURE IN DEGREES CENTIGRADE	EL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED KNOTS	DIRECTION FROM EQUATOR (IN) WILHELMIA ISLAND	INFLUX OF REFLECTION WILHELMIA ISLAND
4051.4	873.9	16.4	3.8	43.0	1047.8	064.1	0.0
4500.0	859.9	14.4	1.0	42.4	1038.7	061.6	1.000203
5000.0	844.5	12.6	.1	42.1	1026.0	059.5	1.000257
5500.0	829.3	11.9	-0.4	42.6	1010.8	058.6	1.000253
6000.0	814.3	11.1	-1.0	43.0	995.3	057.7	1.000248
6500.0	799.5	9.9	-0.9	46.6	981.3	056.3	1.000246
7000.0	784.0	8.7	-0.9	50.9	967.7	054.9	1.000243
7500.0	770.7	7.4	-1.0	54.9	954.2	053.5	1.000240
8000.0	756.6	6.7	-1.3	56.7	939.2	052.0	1.000236
8500.0	742.7	6.2	-1.5	57.7	925.7	050.7	1.000232
9000.0	729.0	5.2	-1.6	61.1	909.7	050.9	1.000229
9500.0	715.5	4.1	-1.7	65.7	896.4	049.6	1.000226
10000.0	702.5	3.0	-1.9	70.2	883.4	048.3	1.000223
10500.0	689.2	2.2	-1.0	80.0	869.5	047.4	1.000218
11000.0	675.4	1.6	-4.4	64.3	855.6	046.5	1.000213
11500.0	663.6	.3	-5.3	65.6	843.5	045.6	1.000209
12000.0	651.1	-0.9	-6.1	67.9	831.4	044.7	1.000205
12500.0	638.9	-2.2	-6.9	69.9	819.0	043.9	1.000201
13000.0	626.8	-3.5	-9.5	68.5	808.2	043.0	1.000197
13500.0	614.6	-4.9	-110.9	63.0	797.4	039.6	1.000192
14000.0	603.0	-5.8	-111.6	63.7	784.5	038.9	1.000188
14500.0	591.5	-6.9	-12.2	65.5	772.4	037.5	1.000184
15000.0	579.8	-6.1	-12.9	68.2	760.9	036.2	1.000180
15500.0	568.5	-9.3	-13.6	70.9	749.6	034.7	1.000176
16000.0	557.4	-10.6	-14.3	73.5	736.4	031.7	1.000172
16500.0	546.0	-11.8	-15.1	76.2	727.5	030.2	1.000168
17000.0	534.9	-13.0	-15.9	78.9	716.7	029.7	1.000164
17500.0	523.5	-14.0	-16.3	86.2	705.9	029.1	1.000160
18000.0	512.3	-15.2	-16.6	96.0	697.0	028.5	1.000156
18500.0	501.0	-16.4	-17.3	96.7	685.2	028.9	1.000152
19000.0	490.4	-17.6	-18.2	96.9	673.7	029.9	1.000148
19500.0	484.3	-18.7	-19.1	96.8	662.5	029.7	1.000144
20000.0	474.5	-19.7	-20.1	95.6	651.5	029.0	1.000140
20500.0	464.9	-20.6	-21.0	96.4	640.0	028.4	1.000136
21000.0	455.5	-21.5	-21.9	96.3	629.9	028.3	1.000132
21500.0	446.2	-22.4	-22.9	96.1	619.5	027.1	1.000128
22000.0	436.1	-23.6	-24.6	91.8	609.6	026.0	1.000124
22500.0	426.1	-26.2	-30.7	65.9	603.7	024.3	1.000120

AX HILIO DATA, INCL IN DUE TO MISSING RAW AZIMUTHS AND LATITUDES.

STATION ALTITUDE 4051.37 FEET : SL
13 MAR. 62 0930 HRS : 151
ASCENSION NO. 14

MANDATORY LEVELS

0720100014

LC-37

TABLE 13

PRESSURE GEOFORENTIAL MILLIBARS	TEMPERATURE DEGREES CENTIGRADE	AIR TEMPERATURE DEGREES CENTIGRADE	WIND DATA WIND DIRECTION DEGREES (TRUE) WIND SPEED KNOTS
59.0	4618.	12.9	42. 9999.0 9999.0XX
60.0	6481.	10.0	47. 9999.0 9999.0XX
750.0	8229.	6.5	27. 149.0 41.5
700.0	10077.	2.8	-1.9 71. 108.5 45.1
150.0	12036.	-1.0	-6.2 6.0 172.2 44.9
100.0	14112.	-6.0	-11.7 6.4. 163.5 44.7
550.0	16327.	-11.4	-14.9 7.0. 193.5 50.7
100.0	18678.	-17.3	-17.7 9.0. 200.9 59.8
450.0	21267.	-22.0	-22.5 9.0. 200.8 65.3

XX = WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION LATITUDE 39°89.0' S.E.L.
13 MAR. 02 1030 HRS. 51
ASCENSION 11.0.

SIGNIFICANT LEVEL W/WA
07:00Z 0095
WHTL 5000
TABLE 14

ULONETIC COORDINATES
32°44'5 LAT UEG
100°5/035 LONG UEG

PRESSURE	GEOF. ALTITUDE	TEMPERATURE	R.HUM.
IN MILLIBARS	IN FEET	AIR DEPTH IN DEGREES CENTIGRADE	PERCENT
874.5	37089.0	20.0	53.0
869.4	41544.2	19.0	51.0
850.0	47867.7	15.8	55.0
820.8	57553.3	12.4	41.0
811.4	60724.4	12.2	42.0
735.6	67374.4	4.4	61.0
707.0	10060.1	1.5	76.0
662.6	11500.8	-1.0	59.0
636.2	12568.6	-3.2	74.0
627.4	12930.8	-3.9	71.0
584.2	14764.2	-9.5	68.0
552.0	15879.7	-12.2	95.0
500.0	18561.2	-16.9	89.0
475.0	19919.9	-20.4	86.0
462.4	20574.7	-20.6	82.0
447.2	21385.0	-22.2	79.0
424.6	22619.1	-26.3	74.0
417.4	23036.4	-27.3	59.0
410.0	23159.8	-27.9	52.0
400.0	24043.9	-27.6	48.0

STATION LATITUDE 39°99.00 FFET SL
13 MAR. 12 1030 HRS 1951
ASCENSION NO. 9,

UNPLK AIR U.S.A
0720020045
WHITE SANDS

TABLE 15

USEFUL TELLURIONALIES
32.40045 LAT ULG
106.57033 LONG JEG

GEOMETRIC ALTITUDE ASL FEET	PRESUMED MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SURFACE WIND CROSSED KNOTS	WIND U/WA KNOTS (IN)	WIND U/WA SPEED KNOTS	INDEX OF REFRACTION
3989.0	874.0	20.0	3.3	1035.7	668.1	190.0	18.1	1.000265
4000.0	874.2	19.9	3.1	1035.6	666.1	189.7	18.1	1.000265
4500.0	859.7	17.3	9	1027.2	664.8	176.4	18.9	1.000268
5000.0	843.5	15.1	2	1016.3	662.3	164.9	20.7	1.000265
5500.0	829.4	13.3	2	1004.7	660.3	156.4	23.2	1.000262
6000.0	813.5	12.2	3	990.8	659.1	146.0	26.2	1.000246
6500.0	798.7	11.0	4	950.6	657.0	145.9	26.4	1.000245
7000.0	784.2	9.6	7	940.6	656.0	146.0	24.7	1.000242
7500.0	769.9	8.2	10	950.2	654.4	146.4	24.6	1.000239
8000.0	755.8	6.8	14	937.8	652.8	151.4	26.5	1.000236
8500.0	742.1	5.5	18	925.3	651.2	155.9	26.4	1.000232
9000.0	729.4	4.1	20	912.0	649.0	150.1	30.9	1.000239
9500.0	714.9	2.9	21	899.0	646.2	157.9	35.4	1.000227
10000.0	701.6	1.6	22	887.6	646.7	160.4	35.4	1.000224
10500.0	688.4	0.5	26	870.0	645.3	164.0	36.6	1.000220
11000.0	675.5	-6	29	844.4	641.1	167.0	37.9	1.000217
11500.0	662.8	-1.8	34	838.9	642.6	175.0	38.8	1.000214
12000.0	650.2	-2.5	51	820.0	634.7	162.5	40.5	1.000208
12500.0	637.9	-3.1	69	795.0	621.1	160.9	42.1	1.000202
13000.0	625.7	-4.1	85	716.6	608.6	161.7	43.5	1.000197
13500.0	613.7	-5.6	91	766.3	797.0	637.8	194.0	1.000194
14000.0	601.8	-7.0	99	80.9	780.8	635.9	195.1	44.5
14500.0	590.2	-8.7	107	85.5	776.2	634.1	195.7	43.8
15000.0	578.8	-10.1	115	89.5	765.1	632.4	195.7	43.4
15500.0	567.5	-11.3	122	92.6	753.7	630.9	195.0	43.0
16000.0	556.3	-12.4	131	94.7	742.1	629.6	195.0	43.2
16500.0	545.3	-13.2	140	93.7	729.8	626.3	194.5	43.3
17000.0	534.4	-14.1	150	92.6	717.7	627.5	194.0	44.0
17500.0	523.8	-14.9	160	91.5	705.6	629.4	193.0	44.7
18000.0	512.4	-15.8	170	90.4	694.1	625.4	193.0	43.8
18500.0	502.2	-16.6	180	89.3	682.7	624.3	192.7	42.8
19000.0	493.1	-17.8	193	88.2	672.2	622.0	193.7	45.7
19500.0	482.2	-19.2	208	87.0	662.3	621.1	194.5	48.5
20000.0	473.4	-20.4	222	85.5	652.1	619.0	194.0	53.4
20500.0	463.8	-20.6	228	82.5	639.6	619.4	194.7	58.0
21000.0	454.4	-21.4	239	80.4	628.4	618.3	196.0	57.2
21500.0	445.1	-22.6	253	78.5	618.4	618.9	198.9	59.4
22000.0	435.9	-24.2	272	76.5	609.7	614.8	202.0	64.1
22500.0	426.9	-25.9	291	74.5	601.6	614.7	203.9	71.9
23000.0	418.0	-27.2	327	59.4	591.9	611.1	203.9	1.000137

STATION NUMBER 3989.00 FEET SL
13 MAR. 02
ASCENSION NO. 95

WEATHER AIR DATA

0720020095
WHITE SKIES

WEOLTA COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 15 CONT'D

GEODETIC PRESSURE	TEMPERATURE	AIR DENSITY	REL.HUM.	DENSITY SALT OF METER	WIND DATA	INDEX
ALITUDE MILLIARS MSL FEET	AIR TEMP POINT DEGREES CENTIGRADE	PERCENT	GM/CURRIC	SALT IN METERS	SPEED KNOTS	OR WIND FRACTION
23500.0	409.3	-27.9	-34.7	51.7	581.2	010.2
24000.0	400.7	-27.6	-35.1	48.3	563.4	010.5

STATION ALTITUDE 3439.00 FT. T.S.L.
 13 MAP. N2 103N LATS. N51
 ASCLUSION, CO. 95

MARICOPA LEVELS
 072000Z UU9
 WHIT SANDS
 TABLE 16

GEOL. COORDINATES
 32°40'43" LAT DEG
 106°37'33" LONG DEG

MILLIBARS	PRESSURE AT海平面	TEMPERATURE AIR DEGREES CENTIGRADE	WELL UNITS		WELL DATA INCHES OF WATER	WELL PERCENT DETERMINATION	WELL DATA IN FEET KNOTS
			PERCENT	DEGREES			
450.0	4783.	15.8	.4	35.	109.0	1.9	
500.0	8456.	11.1	-4	45.	145.9	4.5	
550.0	8209.	6.3	-1.0	57.	152.3	27.3	
600.0	10050.	1.5	-2.5	70.	160.8	30.5	
650.0	11926.	-2.5	-5.1	82.	162.0	40.5	
700.0	14066.	-7.4	-10.0	82.	145.2	44.1	
750.0	16267.	-12.9	-13.0	94.	194.7	45.3	
800.0	18635.	-16.9	-18.3	89.	193.0	45.7	
850.0	21203.	-21.9	-24.2	80.	196.7	57.2	
900.0	24004.	-27.6	-35.2	40.			

STATION ALTITUDE - 5,890.00 FEET
13 MARS 32
ASCENSION, 10.

96

SIGHTING ALTITUDE LEVEL LINE

072000Z0000Z
WHITE SPRINGS
32°40'43" LAT DEG
106°37'03" LONG DEG

TABLE 17

PRESSURE AT TIDE	ATMOSPHERIC DEGREES AND FEET	TEMPERATURE AIR DEGREES CENTIGRADE	KELVIN PER LIN
373.0	3089.0	20.8	290.0
861.0	4354.2	19.9	297.0
850.0	4742.2	17.0	420.0
853.4	5294.4	16.1	420.0
824.0	5611.3	16.3	430.0
723.4	9183.1	6.5	440.0
700.0	10069.8	2.6	290.0
650.2	11695.1	-2.1	290.0
644.0	12264.6	-3.0	290.0
623.0	13091.9	-4.9	290.0
615.4	13441.7	-6.4	290.0
601.8	14616.0	-6.9	290.0
573.5	15245.2	-10.9	290.0
560.4	15826.7	-11.6	290.0
552.2	16197.7	-12.5	290.0
549.0	16343.6	-12.9	290.0
544.2	16503.9	-13.0	290.0
512.0	18103B.4	-15.0	290.0
500.0	18675.8	-17.6	290.0
493.2	19012.6	-18.5	290.0
480.0	19536.7	-19.3	290.0
465.4	20430.1	-21.5	290.0
457.0	20929.0	-22.3	290.0
442.0	21631.7	-24.1	290.0
423.0	22444.8	-25.9	290.0
400.0	24052.4	-27.5	290.0

STATION ALTITUDE 3989.0 FEET : SL
13 MAR. 1942 1130 HRS EST
ASSEMBLAGE NO. 36

UPPER AIR DATA
0720N20090
WHIT SHAW
TABLE 18

SEC. II, COORDINATE,
32.4043 LAT.
106.37035 LONG.

GEOMETRIC PRESSURE	TEMPERATURE ATMOSPHERE AIR DEGREES CENTIGRADE	FLU. ALT. DEGREES CENTIGRADE	PERCENT HUMIDITY	SPECIFIC DENSITY METER NO.15	WIND DATA DIRECTION DEGREES (IN) WINDS KNOTS	WIND SPEED KNOTS	WIND OR FRACTION.
3989.0	875.0	20.0	30.0	1031.3	069.0	250.0	1.000212
4000.0	874.7	20.7	30.4	1031.1	069.9	249.7	1.000212
4500.0	857.3	18.4	55.3	920.4	069.5	254.0	1.000217
5000.0	842.2	16.9	49.1	1007.8	069.5	216.0	1.000211
5500.0	827.3	16.2	39.9	992.2	069.9	198.7	1.000218
6000.0	812.4	15.2	35.6	977.8	066.8	185.9	1.000214
6500.0	797.8	13.9	30.0	47.7	964.8	061.2	172.7
7000.0	782.4	12.5	29.3	49.6	952.1	059.0	172.4
7500.0	769.2	11.1	1.6	51.9	939.5	056.0	174.5
8000.0	755.4	9.8	.9	54.0	927.1	053.7	176.5
8500.0	741.8	8.4	.2	56.1	914.9	051.7	179.7
9000.0	725.4	7.0	-2.6	58.2	902.9	052.1	161.5
9500.0	712.0	5.2	-1.4	62.5	892.3	050.9	163.6
10000.0	701.8	3.1	-2.2	64.2	882.0	049.4	165.8
10500.0	689.7	1.5	-2.2	76.1	871.0	049.6	167.6
11000.0	675.8	-0.1	-2.3	84.5	859.4	044.8	169.7
11500.0	663.1	-1.5	-2.5	92.8	847.9	042.0	191.7
12000.0	650.6	-2.6	-5.5	60.5	835.6	041.6	193.4
12500.0	638.2	-3.5	-6.9	66.4	823.1	040.3	195.1
13000.0	626.0	-4.7	-10.2	65.2	811.0	039.9	193.7
13500.0	614.0	-6.5	-9.4	79.2	810.5	036.4	194.7
14000.0	602.2	-6.9	-12.6	63.5	786.7	030.2	196.4
14500.0	590.5	-8.5	-8.1	68.9	770.1	034.2	198.0
15000.0	579.0	-10.1	-13.7	75.0	765.7	032.3	201.7
15500.0	567.7	-11.2	-15.2	72.3	754.1	030.9	203.5
16000.0	556.6	-12.0	-16.7	68.3	741.6	029.9	205.2
16500.0	545.6	-13.0	-14.5	88.3	729.5	028.6	208.3
17000.0	534.8	-13.6	-13.9	97.3	710.7	026.1	205.7
17500.0	524.2	-14.2	-14.5	97.6	704.3	027.3	201.4
18000.0	513.8	-14.9	-15.1	97.9	692.1	026.5	202.0
18500.0	503.6	-16.8	-17.2	96.6	683.6	025.4	205.4
19000.0	493.5	-18.5	-21.0	80.0	674.4	024.0	208.4
19500.0	483.5	-19.1	-23.6	67.5	662.6	024.1	211.9
20000.0	473.7	-20.2	-25.2	64.0	652.0	019.0	214.9
20500.0	464.1	-21.5	-26.4	64.4	642.0	018.2	217.7
21000.0	454.6	-22.7	-27.5	54.7	631.9	018.7	216.0
21500.0	445.2	-23.8	-29.2	61.0	621.7	015.3	219.1
22000.0	435.0	-24.9	-29.0	58.6	611.6	012.3	212.9
22500.0	427.0	-26.0	-28.5	70.3	601.5	012.7	213.6
23000.0	418.1	-28.5	-28.6	51.0	590.1	012.1	210.1

STATION ALTITUDE 3989.0 FEET
13 MAR. 62 1130 HRS. EST
ASCENSION 110.

90

UPPER AIR DATA

07200±0090
WHITE SANDS
07200±0043 LAT DEG
32.40043
106.37033 LON DEG

TABLE 18 CONT'D

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEWPOINT DEGREES CELSIUS	REL.HUM. PERCENT	INTENSITY GM/CURL METER	SITE OF SWING METER	WIND DIRECTION DEGREES (IN) NOIS	INDEX OF REFRACTION
23500.0	409.4	-27.0 -28.8	84.3	572.0	011.4		1.000152
24000.0	400.9	-27.4 -29.0	86.7	568.1	010.8		1.000150

STATION ALTITUDE 3989.00 FTLL 1.15
13 MAR. 1962 115° HRS 13:15
ASCENSION, NO. 46

MANUFACTORY LEVELS
072000ZUUGU
WHITE SANDS

TABLE 19

STUDY COORDINATES
32°40'43" LAT UEG
106°37'55" LON UEG

PRESSURE (DEPOTENTIAL MILLIBARS	FEET	TEMPERATURE DEGREES CENTIGRADE	AIR DEPOINT CENTIGRADE	WELL DEPT. PERCENT	WELL DEPT. DEGILLS (TN)	WELL DEPT. SPLLD KNOTS
50.0	4759.	17.6	4.6	46.	226.2	17.0
100.0	6429.	14.1	3.1	47.	174.0	25.0
150.0	8201.	9.2	0.6	55.	177.5	20.0
200.0	10060.	2.8	-2.3	69.	186.0	21.0
250.0	12010.	-2.6	-5.7	79.	195.5	32.8
300.0	14076.	-7.1	-12.6	64.	196.7	39.3
350.0	16277.	-12.8	-17.3	69.	208.3	37.3
400.0	18650.	-17.6	-18.1	96.	206.3	50.0
	21212.	-23.2	-28.3	65.	210.0	47.1
	24613.	-27.5	-29.0	87.		